



The VTO2814B is a 14-speed range/splitter gearbox with overdrive designed for an engine torque of 2800 Nm.

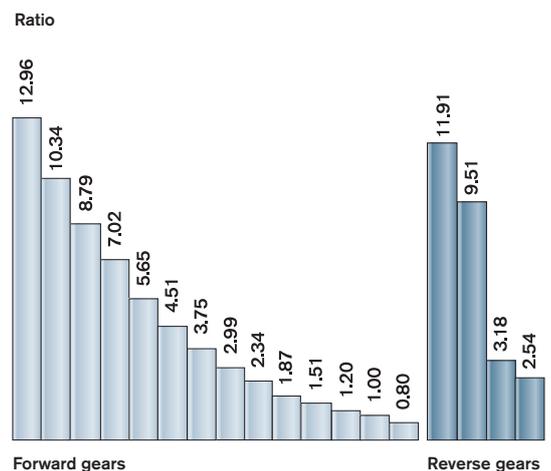
The gearbox has a wide range of gear ratios, and close, well-balanced shift increments. This provides very high starting traction while also offering the capacity for high average speeds. The VTO2814B is intended for heavy and demanding types of transport. The highest gear is an overdrive, which at normal cruising speeds reduces engine speed, resulting in lower fuel consumption.

The gearbox is divided into a forward basic unit and a rear range housing. The basic unit is made of cast iron and contains three basic gears, an integrated splitter gear, and crawler and reverse gears. The range housing, which contains a planet range gear, is available in two versions; nodular iron or aluminium, depending on the type of transport for which it will be used. The clutch casing is made of aluminium, and combined with an aluminium range housing results in a gearbox with low weight.

The VTO2814B has extended oil change intervals for lower operating costs, and reduced environmental impact. When special oil is used, the maximum oil and filter change interval is 400 000 km or every third year.

FEATURES AND BENEFITS

- Overdrive makes it possible to better utilise the engine's economy range of speeds, resulting in lower fuel consumption.
- Planet range gear with a range lock that prevents incorrect downchanges.
- Cable link gearchange system for a vibration-free gear lever and distinct gear positions. Combined with servo-synchronisation, this results in easy operation.
- Prepared for a compact retarder, power take-off, emergency servo pump, oil cooler, and oil temperature measurement.



High reliability and low noise emissions

All shafts, bearings, and gears are robustly dimensioned for a high level of reliability and a long service life. All gears are manufactured of special steel that is case hardened for great strength. The gears in the basic unit are helical, which means that a greater number of teeth mesh at the same time.

The gears on the input, main, and rear shafts are journalled with double needle bearings with steel bearing carriers, resulting in low friction.

All shafts and planet gears in the range gear are journalled with roller bearings, with the exception of the output shaft, which is subjected to lower loads and is journalled with one ball bearing.

Thanks to the optimised shapes of the teeth and the soundproofing panels, the gearbox runs very quietly.



Cable link and servo function for high driver comfort

VTO2814B is fitted with a cable link control system that offers short, distinct gear lever movements. The gear lever is completely free of vibrations, which contributes to comfortable operation and a lower level of noise in the cab. The gearbox also has a patented synchronisation system, which with the help of a mechanical servo function provides extra power as synchronisation occurs. The torque that is generated when synchronisation begins to slow the rotation is converted to an axial force that provides the driver with servo assistance. This design contributes to light-action gearchanging, and increased driver comfort.

SPECIFICATION

Designation.....	VTO2814B
Max. torque.....	2800 Nm
Weight without oil.....	334 kg*
Type.....	Synchronised range/splitter gearbox
No. of forward gears.....	12
crawler gears.....	2
reverse gears.....	4
Oil change volume.....	approx. 13.5 l
incl. normal capacity oil cooler.....	approx. 13.6 l
incl. high capacity oil cooler.....	approx. 14.3 l

* With aluminium range housing. Range housing in nodular iron adds approx. 20 kg

Splitter gear with overdrive reduces engine speed

The splitter gear, which is a compact and robustly journalled unit, is mounted on the input shaft in the front section of the basic unit. The splitter gear is operated pneumatically, and the splitter cylinder is integrated into the clutch casing. The splitter gear's high and low positions can be preselected with a button on the gear lever knob. Gearchanging takes place as soon as the clutch pedal is depressed.

The highest gear is overdrive, with a gear ratio of 0.80:1. In the low split position, the input shaft is locked with the main shaft, resulting in a direct gear. When the high split position is engaged, power from the input shaft is transferred via the intermediate shaft to the main shaft, resulting in a downchange of power. In normal motorway driving, overdrive enables reduced engine speeds, resulting in lower fuel consumption.

Long service life with a forced lubrication system

The gearbox has a rotary oil pump that is mounted on the rear side of the basic unit. It is run by a gear via an intermediate shaft. Oil is forced from the oil pump through an integrated, non-metallic, full-flow filter insert that is easily accessible on the rear side of the range housing. The oil continues to flow to all bearings except the rear bearing for the intermediate shaft, which is lubricated by being partially immersed in oil.

When the oil has cooled, excess oil is returned directly to the inlet side of the oil pump via the overflow valve. This means that the oil is heated faster and can reach the lubrication points more quickly.

The oil level can be easily checked through a peephole on the right-hand side of the gearbox.



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